

AmendmentFOR THE CLAIMS

Claim 1. (Original) A method of cleaning a dual damascene structure, comprising:  
providing a substrate, wherein a first metal layer, a cap layer, and a dielectric layer  
are formed in sequence on the substrate;

forming a dual damascene opening in the dielectric layer and the cap layer to  
expose the first metal layer;

performing a post-etching cleaning step to clean the dual damascene opening  
using a fluorine-based organic solvent; and

sputtering an argon gas to clean the dual damascene opening before forming a  
second metal layer in the dual damascene opening.

Claim 2. (Original) The method of claim 1, wherein the fluorine-based organic  
solvent includes an organic solvent with fluoride acetate acid as a principal solvent.

Claim 3. (Original) The method of claim 2, wherein the fluorine-based organic  
solvent has a chelating agent and an oxidizing agent.

Claim 4. (Original) The method of claim 1, wherein the fluorine-based organic  
solvent includes an organic solvent with ammonium fluoride as a principal solvent.

Claim 5. (Original) The method of claim 4, wherein the fluorine-based organic  
solvent has a chelating agent and an oxidizing agent.

Claim 6. (Original) The method of claim 1, wherein a sputtering power is between  
75 and 300 watts to sputter the argon gas in the dual damascene opening.

Claim 7. (Original) The method of claim 1, wherein a sputtering time is about 10  
to 30 seconds to sputter the argon gas in the dual damascene opening.

Claim 8. (Original) The method of claim 1, wherein the material of the cap layer is  
silicon nitride (SiN).

Claim 9. (Original) The method of claim 1, wherein the material of dielectric layer  
has a low dielectric constant (low-k), and is silicate based or an organic material.

Claims 10-20 (Withdrawn)